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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,066

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EXAMINER

COHEN, STEFANIE J

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,066	Applicant(s) SAITO ET AL.	
	Examiner STEFANIE COHEN	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen (6692712) in view of Morita et al (20030170160) and further in view of Komatsu et al (3900429).

Andersen, col. 3 lines 10-15, teaches an exhaust gas catalyst comprising 72-82% zirconia and 15-25% ceria. Andersen, col. 2 lines 46-48, teaches the catalyst can be in conventional form preferably as a honey comb monolith, which is a porous carrier. Andersen, col. 3 lines 34-37, teaches rhodium on the support in the conventional can be in admixture with other catalytically active material, particularly comprising one of more Rh, Pt and Pd on a separate support.

Although Andersen teaches using Rh solely as the catalyst due to expense, it would have been obvious to one of ordinary skill in the art at the time of the invention that adding Pt or Pd to the catalyst would result in the same

Art Unit: 1793

efficiency of purifying the gas. Pt and Pd are all considered to be precious metals and are all part of the platinum group therefore these elements are expected to have similar properties. Therefore, a gas purifying catalyst would have similar catalytic activity with any combination of these metals.

Andersen, col. 4 lines 10-15, further teaches the Rh precursor which is deposited on the support can be in the admixture with other materials which are to be present in the same layer as the Rh.

Although Anderson teaches porous carrier, Andersen does not teach a specific surface area of the carrier.

Morita, paragraph 95, teaches a catalyst for purification of exhaust gases where a honey comb support has a specific surface area ranging from 20-200 m²/g.

It would have been obvious to one of ordinary skill in the art at the time of the invention to ensure the honeycomb support specific surface area as taught by Morita is used in the honeycomb support as taught as taught by Andersen because if the specific surface area is less than 20 m²/g, there is a possibility that: the catalytic component cannot be supported to such a degree that it is well dispersed, therefore the efficiency of the contact between the catalytic component and CO and the catalytic activity may be so low that it may be impossible to obtain sufficient exhaust gas purification efficiency. On the other hand, even if the specific surface area is made excessively large, there is a possibility that: the efficiency of the contact between the catalytic component and

Art Unit: 1793

CO or the catalytic activity cannot be enhanced by such a degree as rewards this increase of the specific surface area, but rather there may occur unfavorable effects such that: the accumulation of catalytically poisonous components increases, or the life time of the catalyst becomes short.

It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the catalytic metal particle atoms depending on the size and surface area to obtain maximum catalytic activity.

Further, it would have been obvious to one of ordinary skill in the art at the time of the invention that the catalytic metals form single particles to maximum the exposure of the surface area of each particle to the gas stream.

Regarding claim 2, Andersen, col. 4 lines 10-15, further teaches the Rh precursor which is deposited on the support can be in the admixture with other materials which are to be present in the same layer as the Rh. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the thickness by controlling the amount of metal precursor deposited on the support to achieve maximum catalytic activity of the catalyst.

Further, Andersen, col. 2 lines 25-30, teaches the catalyst has the ability to oxidize Co to CO₂.

Art Unit: 1793

Regarding claim 3, forming a complex oxide comprising a precious metal and ceria is an inherent characteristic of the catalyst and therefore does not further limit the claim.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen (6692712) in view of Morita et al (20030170160) as applied to claim 2 and further in view of Komatsu et al (3900429).

Although Andersen in view of Morita teaches a purifying catalyst, neither teaches a particle size of the catalytically active material.

Komatsu teaches a catalyst for purifying exhaust gases where the diameter of the particles of the starting materials should preferably range from 2 microns to 2 mm.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the particle size as taught by Komatsu in the Andersen in view of Morita catalytically active material because Komatsu teaches the smaller the grain size, the greater will be the purifying characteristics. However, if the grain size is less than 2 microns, the expense for preparing particles of this size is increased, while grain sizes larger than 2 mm will materially lower the purifying characteristics.

Further, Komatsu, col. 3 line 51, teaches the particles can exist in granules.

Art Unit: 1793

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen (6692712) in view of Morita et al (20030170160) as applied to claim 3 and further in view of Komatsu et al (3900429).

Although Andersen in view of Morita teaches a purifying catalyst, neither teaches a particle size of the catalytically active material.

Komatsu teaches a catalyst for purifying exhaust gases where the diameter of the particles of the starting materials should preferably range from 2 microns to 2 mm.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the particle size as taught by Komatsu in the Andersen in view of Morita catalytically active material because Komatsu teaches the smaller the grain size, the greater will be the purifying characteristics. However, if the grain size is less than 2 microns, the expense for preparing particles of this size is increased, while grain sizes larger than 2 mm will materially lower the purifying characteristics.

Further, Komatsu, col. 3 line 51, teaches the particles can exist in granules.

Further, Andersen, col. 4 lines 15-30, teaches the catalyst is useful for catalyzing a chemical reaction comprising the reduction of nitrogen oxide to nitrogen by contacting the nitrogen oxide with the catalyst.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 9 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1793

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEFANIE COHEN whose telephone number is (571)270-5836. The examiner can normally be reached on Monday through Thursday 9:3am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Melvin Curtis Mayes can be reached on 5712721234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Stefanie Cohen

1/2/2009

SC

February 2, 2009

/Melvin Curtis Mayes/
Supervisory Patent Examiner, Art Unit 1793

